

REMARKS

Claims 1, 3-5, 7, 9-11, 34, 37, 44, 49-52 and 54-64 are currently pending in the subject application, and are presently under consideration. Claims 1, 3-5, 7, 9-11, 34, 37, 44, 49-52 and 54-64 are rejected. Claims 1, 7, 44, 56, and 63 have been amended. Claims 57-62 have been cancelled. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I. Rejection of Claims 1, 7 and 56 for Informalities

Claims 1, 7 and 56 stand objected to because of various informalities. Each of these claims has been amended to address the informalities pointed out by the Examiner. Accordingly, withdrawal of this rejection is respectfully requested.

II. Rejection of Claims 44, 49-52 and 54-55 Under 35 U.S.C. §112, First Paragraph

Claims 44, 49-52 and 54-55 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Claim 44 has been amended to address the issues raised by the Examiner. Specifically, the extraneous recitation of an ADC has been eliminated, and the claim has been amended to recite that the bypass is not part of the signal combiner. Accordingly, withdrawal of this rejection is respectfully requested.

III. Rejection of Claims 34 and 37 Under 35 U.S.C. §103(a)

Claims 34 and 37 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,081,515 to Toivola ("Toivola") in view of U.S. Patent No. 6,611,565 B1 to Bada, et al. ("Bada"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

The Examiner relies on Toivola for a teaching of a multiband tunable filter, based on the single band tunable filters in Toivola. The Examiner appears to argue that all tunable filters are inherently multiband, stating that "since the frequency setting of the controllable filter can be

changed or amended, the examiner interprets they can be adjusted to function as a multiband adjustable filter.” As applicant has noted previously, it is respectfully submitted that one of skill in the art, reading the claim in light of the specification, would understand that the term “multiband tunable filter” refers to a filter having *multiple* tunable bands. To interpret “multiband” in the manner proposed by the Examiner, the term “tunable” is rendered meaningless. Bada does not remedy the deficiencies of Toivola. It is thus respectfully submitted that no *prima facie* case for the obviousness of claim 34 has been established. Claim 37 depends from claim 34, and is allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

IV. Rejection of Claims 1, 4, 5 and 7 Under 35 U.S.C. §103(a)

Claims 1, 4, 5 and 7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Toivola in view of U.S. Publication No. 2002/0080887 A1 to Jeong, et al. ("Jeong"), U.S. Patent No. 6,944,139 B1 to Campanella ("Campanella"), and U.S. Patent No. 6,115,368 to Schilling ("Schilling"). Withdrawal of this rejection is respectfully requested at least the following reasons.

The Examiner argues that it would have been obvious to modify Toivola to incorporate a digital exciter that provides a multi-carrier signal comprising a plurality of time interleaved digital signals from baseband data and a digital to analog converter that converts the digital multi-carrier signal into an analog multi-carrier signal, as is alleged to be taught in Jeong. It is respectfully submitted, however, that Jeong teaches an Orthogonal Frequency Division Multiplexing (OFDM) approach, which is incompatible with the time division demultiplexer recited in claim 1. Further, as discussed above, Toivola does not contain the teaching of multiband tunable filters recited in the claim attributed to it by the Examiner. Campanella and Schilling fail to remedy the deficiencies of Toivola and Jeong as described previously. It is thus respectfully submitted that the cited art does not provide the teachings attributed to it by the Examiner, and thus no *prima facie* case of obviousness has been established.

It is further submitted that the Examiner has not provided a rational basis for combining the teachings of Toivola and Jeong. Applicant's representative respectfully submits that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S. Ct. 1727, 1741 (U.S. 2007), citing *In re Kahn*, 441 F.3d 997, 998 (CA Fed. 2006). Rational is defined in the Random House dictionary ©2006 in one way as "agreeable to reason; reasonable; sensible." The Supreme Court's requirement for a rational underpinning to support a legal conclusion of obviousness must therefore be sensible to the person of ordinary skill in the art. Conversely, a conclusion that is not rational is most likely the result of the use of impermissible hindsight.

The Examiner has stated that it would have been obvious to modify Toivola to add the recited digital exciter and digital-to-analog converter to "randomize the error and improve the integrity of the transmitted and received signal." It is respectfully submitted, however, that there is no reason to believe that the addition of an exciter that produces a multicarrier signal or a digital-to-analog converter would provide the effect cited by the Examiner, and no evidence is provided to support the assertion. To the extent that the Examiner is relying on personal knowledge in advancing this rationale, this taking of official notice is respectfully traversed, as there is no reason known to Applicant's representative why the addition of a multicarrier exciter and/or a DAC would provide the advantages cited by the Examiner. Absent such an explanation, it is respectfully submitted that no prima facie case of obviousness has been established.

For the reasons described above, claims 1, 4, 5 and 7 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

V. Rejection of Claim 3 Under 35 U.S.C. §103(a)

Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Toivola in view of Jeong, U.S. Patent No. 6,944,139 B1 to Campanella ("Campanella") and U.S. Patent No. 6,115,368 to Schilling ("Schilling") as applied to claim 1, and further in view of U.S. Patent No. 6,291,924 B1 to Lau, et al. ("Lau"). Claim 3 depends from claim 1, and is allowable for at least

the same reasons. Lau does not remedy the deficiencies of Toivola, Jeong, Campanella, and Schilling as described previously. Accordingly, withdrawal of this rejection is respectfully requested.

VI. Rejection of Claim 9 Under 35 U.S.C. §103(a)

Claim 9 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Toivola in view of Jeong, Campanella and Schilling as applied to claim 1, and further in view of U.S. Patent No. 6,664,921 B2 to Pratt ("Pratt"). Claim 9 depends from claim 1, and is allowable for at least the same reasons. Pratt does not remedy the deficiencies of Toivola, Jeong, Campanella, and Schilling as described previously. Accordingly, withdrawal of this rejection is respectfully requested.

VII. Rejection of Claims 10 and 11 Under 35 U.S.C. §103(a)

Claims 10 and 11 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Toivola in view of Jeong, Campanella and Schilling as applied to claim 1, and further in view of U.S. Patent No. 5,805,983 to Naidu, et al. ("Naidu"). Claims 10 and 11 each depend, directly or indirectly, from claim 1, and are allowable for at least the same reasons. Naidu does not remedy the deficiencies of Toivola, Jeong, Campanella, and Schilling as described previously. Accordingly, withdrawal of this rejection is respectfully requested.

VIII. Rejection of Claim 56 Under 35 U.S.C. §103(a)

Claim 56 stands rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Publication No. 2002/0122008 A1 to Caimi, et al. ("Caimi") in view of U.S. Publication No. 2002/0196876 A1 to Takada ("Takada"). Claim 56 has been amended to recite a code division multiple access multiplexer that combines the received signals into an analog multicarrier signal. Support for this amendment can be found at least at paragraph 0056 and in FIG. 8. Caimi contains no teaching or suggestion of generating a digital multi-carrier signal at an exciter and distributing an analog multi-carrier signal into a plurality of analog signals, as the term "multi-

carrier signal” would be used and understood by one of skill in the art, as the cited portion of Caimi, particularly FIG. 13 and the accompanying text, teaches a transceiver for servicing the elements of a smart antenna array in a beamforming arrangement. Takeda does not appear to remedy this deficiency of Caimi. It is thus respectfully submitted that claim 56 should be patentable over Caimi in view of Takeda.

In the rejection of claim 60, which depended indirectly from claim 56 and recited a CDMA multiplexer, the Examiner cited Caimi and Takeda in further view of Pratt and U.S. Patent No. 6,473,416 B1 to Lee. It is respectfully submitted, however, that one of skill in the art would not utilize a CDMA multiplexer with the beamforming arrangement of Caimi. Beamforming, as the term is used in the art, generally refers to a manipulation of the amplitude and phase of a common signal broadcast at a multiple antenna structure used to broadcast or receive a directional signal by taking advantage of interference between phase shifted copies of a signal. As Applicant’s representative understands the process and the system of Caimi, each antenna array receives a copy of the broadcast signal, with variations in phase and amplitude provided by the phase shifters 172 and the digital filters 170 on that path. Combining the signals in a CDMA arrangement would defeat the purpose of beamforming, which is to get a combined signal that represents the signal received in the selected direction of the smart array. Modifying Caimi in this manner would alter the basic inventive principle of the system, and thus cannot provide appropriate grounds for a prima facie case of obviousness. In re Ratti, 46 CCPA 976, 123 USPQ 349 (CCPA 1959). It is thus respectfully submitted that claim 56 is allowable over the cited art, and the withdrawal of this rejection is respectfully requested.

IX. Rejection of Claims 63 and 64 Under 35 U.S.C. §103(a)

Claims 63 and 64 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Caimi in view of Takada and Pratt as applied to claim 57, and further in view of U.S. Patent No. 6,128,470 to Naidu, et al. ("Naidu"). Claims 63 and 64 depend indirectly from claim 56, and are allowable for at least the same reasons. Naidu does not remedy the deficiencies of Caimi,

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Takeda, and Pratt as described previously. Accordingly, withdrawal of this rejection is respectfully requested.

CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,

Date 29 June 2009

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